ABSTRACT OF THE DISCLOSURE

To facilitate inter-processor communication between multiple processors in a computer system and to enable the accessing of a dual port memory, or other system resources, without requiring the memory or the data/address bus to be locked, the present invention provides a semaphore unit that preferably incorporates a shared mailbox architecture that, in combination with a set of hardware semaphore registers, enables inter-process communication among the multi-processors. Cooperative multitasking may be accomplished through the use of shared mailbox communication protocols while a preemptive multitasking may be accomplished through the use of hardware semaphore registers.

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